REMARKS/ARGUMENTS

Claims 1 and 4-7 remain in the application. Applicants respectfully request reconsideration of this application.

Rejection - 35 U.S.C. § 102(e)

Claims 1 and 4-7 were rejected under 35 U.S.C. § 102(e) as being anticipated by US 6,207,475 (Lin).

Applicants respectfully traverse this rejection. In the rejection, the Examiner refers to FIG. 5, items (48) and (84), col. 10, lines 12-32 and col. 10, lines10-65 of Lin. Items (48) are solder balls and item (84) is an underfill material. The Examiner equates the underfill material (84) of Lin to Applicants' claimed adhesive material, and the Examiner also equates the solder balls (48) of Lin to Applicants' claimed solid solder element. In addition to the arguments provided in the last office action, Applicants assert that Lin's underfill material (84) and solder balls (48) cannot perform in the manner claimed by Applicants' invention.

As to claim 1, the Lin reference neither teaches not suggests an adhesive material (Lin's underfill) being applied to a portion of the solid solder element (Lin's solderball) so as to overlap with the solderable substrate outside of a predefined area reserved for subsequent component placement. As seen in FIG. 1, Applicants adhesive material 104 is outside of the area where the component 108 gets placed. Applicants' adhesive material does not and is not intended to provide underfill capability. The very purpose and placement of the underfill of Lin, on the other hand, is to be "under" the component where it "fills" in gaps between the solderballs (48).

In Lin's embodiment described in conjunction with FIG. 5, Lin teaches the use of a pre-cure process for preventing stickiness on the surface of the underfill (84). Applicants' invention, on the other hand, uses the adhesive material for coupling the solid solder element to the solderable substrate (claim 4).

Lin's die (44) are then transported to another process station for combining with a substrate (56). The IC die (44) is mounted to the substrate (56) so that the solder balls (48) form intimate contact with electrical conductors (58) of the substrate. Lin then performs a single solder reflow and underfill curing process, as described in col. 10, lines 26-29 and again on lines 55-56. Applicants' invention, on the other hand, recites (claim 4) that the adhesive material is cured so as to immobilize the solid solder element; and the component subsequently being coupled to the solderable substrate via the solid solder element during a reflow process. Thus, the claimed curing and reflow processes do not occur simultaneously.

Claim 7 recites: "an adhesive material having predetermined geometry and adhesive properties cured so as to couple the solid solder element to the solderable substrate; and the component subsequently being coupled to the solderable substrate via the solid solder element during a post cure reflow process during which the adhesive material maintains its geometry and adhesive properties." Here again, the curing and reflow processes are not occurring simultaneously as in Lin.

In summary, Applicants' adhesive 104 is cured when deposited onto the solder preform 106 and contact surface 102, and adhesive 104 is not subsequently used to adhere or attach to component 108, during the subsequent reflow. This is unlike Lin where the adhesive (84) is meant to attach to contact surface (56) during the subsequent reflow. Also, the solder preform 106 of Applicants invention is not reflowed onto contact surface 102 prior to assembly to component 108, whereas in Lin the solder balls (48) are previously reflowed onto component (44). These differences are in structure as well as function and as such Applicants respectfully assert that Lin's claims do not teach Applicants' invention. Since the cited art does not teach or suggest that which is claimed in the present application, Applicants respectfully request that the rejection be withdrawn.

Accordingly claims 1, 4 and 7 are believed to be in condition for allowance. Claims 5 and 6 provide further limitations to what is believed to be an allowable claim 4 and hence are also in condition for allowance.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. No amendment made was for the purpose of narrowing the scope of any claim, unless Applicant has argued herein that such amendment was made to distinguish over a particular reference or combination of references.

The Applicants believe that the subject application, as amended, is in condition for allowance. Such action is earnestly solicited by the Applicants.

In the event that the Examiner deems the present application non-allowable, it is requested that the Examiner telephone the Applicant's attorney or agent at the number indicated below so that the prosecution of the present case may be advanced by the clarification of any continuing rejection.

The Commissioner is hereby authorized to charge Deposit Account 502117, Motorola, Inc, with any fees which may be required in the prosecution of this application.

Respectfully submitted,

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